We claim:

1. A substrate-based packaged electronic device, comprising:

a substrate having first and second surfaces, wherein:

a degating region is formed on the first surface of the substrate; and

structure for making external electrical connection from the device is formed on the second surface of the substrate;

an electronic device attached to the first surface of the substrate, the electronic device being electrically connected to the structure for making external electrical connection; and

encapsulant formed on the first surface of the substrate to enclose the electronic device, the degating region being formed outside the encapsulant, wherein:

the encapsulant material and the degating region material contacting the encapsulant are chosen such that the adhesive force between the encapsulant material and the degating region material is less than the adhesive force between the encapsulant material and the substrate material.

2. A device as in Claim 1, wherein the adhesive force between the encapsulant material and the degating region material contacting the encapsulant is less than one half the adhesive force between the encapsulant material and the substrate material.

3. A device as in Claim 1, wherein the adhesive force between the encapsulant material and the degating region material contacting the encapsulant is approximately 10% of the adhesive force between the encapsulant material and the substrate material.

4. A device as in Claim 1, wherein the degating region material contacting the encapsulant is gold.

5. A device as in Claim 4, wherein the encapsulant material is a thermosetting epoxy resin.

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6. A device as in Claim 1, wherein the structure for making external electrical connection further comprises a plurality of solder bumps formed on the second surface of the substrate.

7. A device as in Claim 1, wherein the electronic device is an integrated circuit chip.

8. A device as in Claim 7, wherein the adhesive force between the encapsulant material and the degating region material contacting the encapsulant is approximately 10% of the adhesive force between the encapsulant material and the substrate material.

9. A device as in Claim 7, wherein the degating region material contacting the encapsulant is gold.

10. A device as in Claim 1, wherein the substrate is a multilayer substrate, electrically conductive traces and/or regions being formed within the multilayer substrate.

11. A substrate for use in forming a substrate-based packaged electronic device, wherein:

a surface of the substrate is adapted for mounting an electronic device;

a degating region is formed on the surface of the substrate at a location such that the edges of a mold runner of a mold used to encapsulate the electronic device fit entirely within the degating region when the substrate is positioned in the mold during encapsulation of the electronic

device; and

the degating region material is chosen such that the adhesive force between the encapsulant material and the degating region material that contacts the encapsulant is less than the adhesive force between the encapsulant material and the substrate material.

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12. A substrate as in Claim 11, wherein the adhesive force between the encapsulant material and the degating region material contacting the encapsulant is approximately 10% of the adhesive force between the encapsulant material and the substrate material.

13. A plurality of substrates formed in a strip configuration for use in forming a plurality of substrate-based packaged electronic devices, each of the substrates being formed as in Claim 11.

14. A substrate as in Claim 13, wherein the adhesive force between the encapsulant material and the degating region material contacting the encapsulant is approximately 10% of the adhesive force between the encapsulant material and the substrate material.

15. A method for encapsulating an electronic device attached to a surface of a substrate to form a packaged electronic device, the method comprising the steps of:

forming a degating region on the substrate surface;

forming an encapsulant on the substrate surface to enclose the electronic device, the encapsulant material and the degating region material that contacts the encapsulant being chosen such that the adhesive force between the encapsulant material and the degating region material is less than the adhesive force between

the encapsulant material and the substrate material; and

removing encapsulant formed on the degating region such that the electronic device remains enclosed by the encapsulant and the packaged electronic device is not damaged.

16. A method as in Claim 15, wherein the step of forming an encapsulant further comprises:

positioning a second surface of the substrate, the substrate second surface being opposite the substrate first surface, against a surface of a first section of a mold;

positioning a surface of a second section of a mold against the substrate first surface, wherein:

a cavity is formed in the second mold section such that the electronic device is within the cavity and a portion of the substrate first surface surrounding the electronic device faces into the cavity; and

a channel is formed in the surface of the second section of the mold to extend from the cavity, the channel being located such that, when the surface of the second mold section is positioned against the substrate first surface, the edges of the channel are fully within boundaries of the degating region;

transferring the encapsulant through the channel to the cavity; and

hardening the encapsulant after the cavity has been completely filled with encapsulant.

17. A method as in Claim 16, wherein the mold is a standard two-piece mold.

18. A method as in Claim 15, wherein the adhesive

force between the encapsulant material and the degating region material that contacts the encapsulant is less than one half the adhesive force between the encapsulant material and the substrate material.

19. A method as in Claim 18, wherein the adhesive force between the encapsulant material and the degating region material that contacts the encapsulant is approximately 10% of the adhesive force between the encapsulant material and the substrate material.

20. A method as in Claim 15, wherein the degating region is made of gold.

21. A method as in Claim 20, wherein the encapsulant material is a thermosetting epoxy resin.

22. A method as in Claim 15, wherein the electronic device is an integrated circuit chip.

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